WE MAKE
SOUND VISIBLE

sevenbel
EFFECTIVE SOUND IMAGING

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As a product development engineer you are used to working effectively and target-oriented. Stop losing time to a lengthy search for possible sources of acoustic problems inside and outside the vehicle. Use Seven Bel Sound Scanners and make disturbing sound sources visible. Fast, simple and effective.
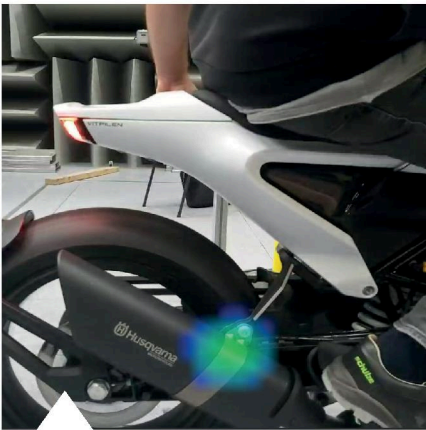
1 Results in 3 minutes

No other measurement system delivers acoustic images that fast and efficiently. You can set up the measurement system in less than 3 minutes, conduct the measurement of your use case and immediately receive dependable results for further analysis.

2 Anytime – anywhere

Due to the ultra-compact and light construction you are entirely independent in terms of location. Seven Bel's high performance measurement system works with a mobile device and cloud infrastructure in the background. Notebooks, power supply units or recorders that are usually required are no longer necessary.

3 Extraordinary image quality

Distributed microphones based on state-of-the-art semiconductor technology scan the acoustic field on an area of a disc and produce acoustic images with superior image quality and a high level of information. This facilitates the correct interpretation of the measured data for the user and leads to solutions that can be implemented quickly.

4 Intuitive handling

Benefit from a massively simplified workflow to measure and analyze your sound events. Share your results with your colleagues, partners or clients in the form of automatically generated reports.
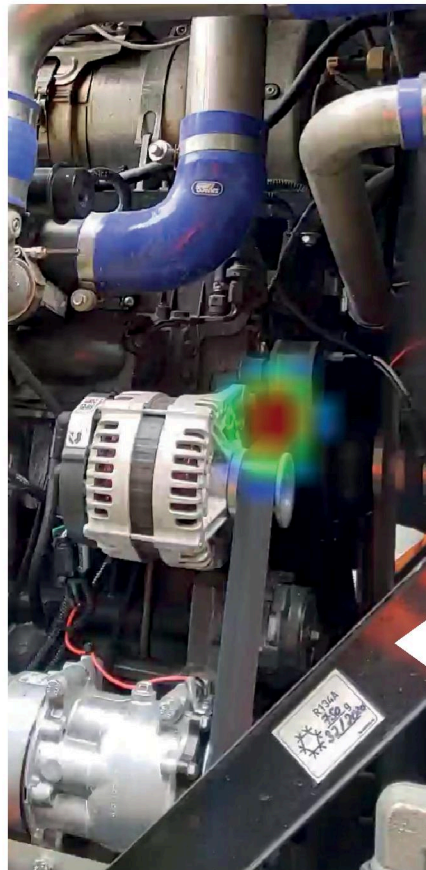
CONSTRUCTION MACHINERY

Complement your existing measurement equipment and localize dominant sound sources in order to implement effective design changes for complying with regulatory requirements and protecting the health of operators.
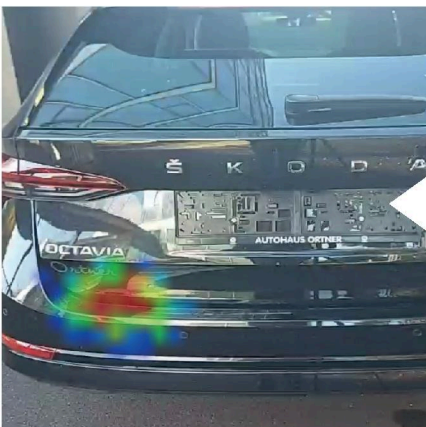

MOTORCYCLE

You have identified a suspicious sound during the pass-by test? Simulate operating conditions on the roller dyno and precisely localize the component causing the noise.
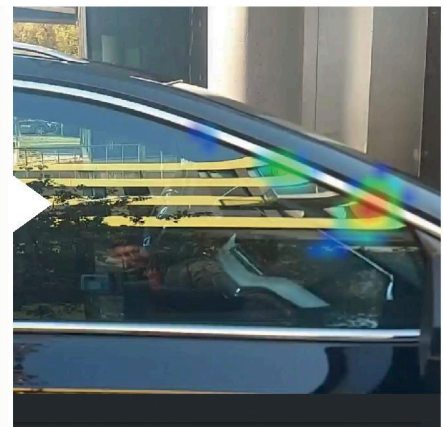
ENGINE BAY

You hear suspicious noise coming from the engine bay? Do not replace parts by trial and error but localize the root cause. In many situations, the source is not located where it is first suspected.

CAR CABIN

Check how soundproof your vehicle cabin is by using a loudspeaker in the vehicle interior and localizing leaks in door and window seals both during the development process and in series production.

SPECIFICATIONS

	P12	P50	P132	P254
SENSOR				
Diameter of scan area	12 cm	50 cm	132 cm	254 cm
Weight (excl. sensor mount and tripod)	200 g	500 g	1400 g	900 g
Rotation frequency (min/typ/max)	0.2 / 2 / 5 revs/s	0,2 / 2 / 5 revs/s	0,2 / 1 / 2 revs/s	0,2 / 0,5 / 1 revs/s
Number of microphones	8	5	5	5
ACOUSTIC IMAGE				
Frequency range	2.8kHz - 44 kHz	700 Hz - 10,5 kHz	250 Hz - 10,5 kHz	125 Hz - 4 kHz
Spatial resolution at 5 kHz (3 dB DNR)	28 °	6,7 °	2,6 °	1,4 °
Dynamic range (DNR)	> 13 dB	> 13 dB	> 13 dB	> 13 dB
Computed images per revolution	up to 6	up to 6	up to 6	up to 6
Measuring distance	0,5 m - infinity	0,5 m - infinity	0,5 m - infinity	0,5 m - infinity
MICROPHONE				
Sample frequency	89 kHz	21,5 kHz	21,5 kHz	21,5 kHz
Resolution	24 bit	24 bit	24 bit	24 bit
Frequency range	50 Hz - 20 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz	50 Hz - 20 kHz
Sensitivity tolerance	+/- 1 dB	+/- 1 dB	+/- 1 dB	+/- 1 dB
Maximum measurable sound pressure level	132 dB	117 dB	117 dB	117 dB
Absolute maximum sound pressure level	N/A	160 dB	160 dB	160 dB

ANALYSIS

Audio

- Real time display of time signal, frequency spectrum and spectrogram
- Stream/pause mode
- Selection of time intervals
- Playback of filtered audio

Acoustic image/video

- Selection of frequency band
- Audio playback
- Single frame or time averaged frames
- Video playback

Data management

- Automated pdf report generation of single acoustic image or timed averaged images including meta data, time/frequency domain data
- Export and import of measurements in zip format via installed file sharing apps (e.g. Google Drive)

ENVIRONMENTAL CONDITIONS

Operating temperature	-10 °C - 60 °C
Relative humidity	45 % - 85 %

MOBILE DEVICE

Operating system	Android OS version 10.0 or higher